

HUD Multifamily Policies
&
Radon Risk Reduction in the United States

June 18, 2013 – 2:00 PM EDT

This webinar will be archived with linked references

Radon and HUD Multifamily Mortgage Policy

Overview of Webinar

- HUD Multifamily Mortgage Radon Policy
- Risk Citations, Goals and Policies
- Radon Certification Infrastructure & Organizations
- Radon Standards and Multifamily
- Regulated and Non-regulated States
- Qualified Application of Standards
- Question & Answer

Radon and HUD Multifamily Mortgage Policy

Radon – Rn222 – A Gas

- Found all over the United States
- Radon is a naturally occurring radioactive gas without color, odor, or taste that comes from the radioactive decay of uranium in soil, rock, and groundwater.
- Radon emits ionizing radiation during its radioactive decay to several radioactive isotopes known as radon decay products.
- Radon gets into the indoor air primarily from soil under homes and other buildings.
- Radon is a known human lung carcinogen and is the largest source of radiation exposure and risk to the general public.

Radon and HUD Multifamily Mortgage Policy

How to Review a Proposed Project for Compliance with HUD's Multifamily Radon Policy



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Radon Report

- Required for all MAP and TAP applications
 - *Unless an exception applies*
 - Must be included in the pre-application or application
 - Addendum to the Environmental Report
 - Content:
 - Results of testing
 - Mitigation details, including timing
 - Must be amended to include any post-application testing and/or mitigation



Radon Report (cont.)

- Must be prepared by Radon Professional
 - Must supervise all testing and mitigation
 - Definition:
 - Certification from AARST NRPP or the NRSB, AND
 - License / certification from the state



Exceptions

- General exception: valid justification, determined by Radon Professional
- 223(f) in low risk areas according to EPA Map and available local maps/data: no testing required
 - No local map/data: EPA map is OK
 - Local data/map OK as long as government-sponsored
 - Readily available = on the internet, perhaps available at the local government agency if not difficult to get a hold of
- 223(a)(7) – no Radon Report is required
- Where the Radon Report is not required, testing is still encouraged. All testing and mitigation must be performed as described in the Radon Notice.

Radon Report: Details to include



- Testing requirement
 - Make sure standard is referenced: ANSI-AARST MAMF 2010 (or 2012)
 - Make sure Radon Professional supervision statement is included, as well as copies of certifications
 - Make sure at least 25% of randomly selected ground floor units were tested, and a statement to that effect is included
 - Mitigation required if results are at or above 4 pCi/L – results should be clearly discussed
 - Resident notification must have occurred and should be specifically noted in the report



Radon Report: Details to include (cont.)

- Mitigation requirement
 - Make sure standard is referenced:
 - ASTM E 2121-11 (existing structures); or
 - AARST provisional multifamily mitigation standard
 - ASTM E 1465-08(a)(new construction)
 - Make sure the entire building is mitigated
 - i.e. NOT unit by unit mitigation
 - Resident notification
 - Post-mitigation testing
- Certificate of Completion appended to Radon Report once testing / mitigation is done



223(f) transactions

- Testing must have been done within a year of application submission
 - Unless special exception
 - Or proceed directly to mitigation
- Mitigation
 - ASTM E 2121-11
 - Must be completed as quickly as practicable, but no later than 12 months after Initial Endorsement / Initial Closing



Sub Rehab & Conversions

- Testing required in all radon risk zones
 - Prior to application: Testing must be performed no earlier than 1 year prior
 - Post-application:
 - If testing is not feasible before application because of changes to building envelope, proceed directly to mitigation
 - Testing after construction must take place before Final Endorsement, and will result in retrofit mitigation if results are above threshold
- Mitigation: ASTM E 2121-11



New Construction transactions

- All new construction in Zone 1 must be built with passive radon resistant construction according to ASTM E 1465-08a
- All new construction in Zones 2 and 3 must meet the gas permeable layer, ground cover, and foundation wall requirements of ASTM E 1465-08a
- Post-construction testing is required. If above threshold:
 - Active system must be installed in Zone 1
 - Passive system must be installed in Zones 2 and 3
- Residents must be informed of the radon testing and mitigation that took place
- Mitigation must be completed by Final Endorsement / Final Closing



Contact

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US Radon Policy and Infrastructure

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AMERICAN ASSOCIATION OF

AARST

RADON SCIENTISTS AND TECHNOLOGISTS, INC.

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Radon Health Risk in the United States

- EPA estimates that out of a total of 157,400 lung cancer deaths nationally in 1995, 21,100 (13.4%) were radon related. Among Non-smokers, an estimated 26% were radon related.
 - “EPA Assessment of Risks from Radon in Homes ” (PDF, 99 pp, 1.3MB) [EPA 402-R-03-003], June 2003
- In 2003, EPA updated the Agency’s estimates of lung cancer risks from indoor radon based on the National Academy of Sciences’ (NAS) latest report on radon, The Biological Effects of Ionizing Radiation.
- EPA’s updated calculation of a best estimate of annual lung cancer deaths from radon is about 21,000 (with an uncertainty range of 8,000 to 45,000) and is consistent with the estimates of the BEIR VI Report. (2013 population/housing adjusted rate ~25,000 deaths/year.)

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Public Health Risk Citations

- EPA, the National Academy of Sciences, and the U.S. Surgeon General have stated that indoor radon is the second leading cause of lung cancer in America, after smoking.
- The EPA Action Level for radon is 4 pCi/L
- The World Health Organization has set a reference level of 2.7 pCi/l

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U.S. Policy and Goals

The authority for EPA's indoor radon activities comes from the 1988 Indoor Radon Abatement Act (IRAA).

- Although there is no safe level of exposure to radon gas, the goal established by Congress in the 1988 IRAA is clear:

The national long-term goal of the United States with respect to radon levels in buildings is that the air within buildings in the United States should be as free of radon as the ambient air outside of buildings.

Radon Policy Infrastructure in the United States

- 1988 Indoor Radon Abatement Act Established Initial Standards and Professional Criteria (EPA RPP)
- Stewart McKinney Amendments
 - Researches Initial Multifamily Housing Protocols
 - Document becomes the AARST MF Measurement Standard
- 2011 The Federal Radon Action Plan

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State and Private Organization Support

- American Association of Radon Scientists and Technologists – Private Sector
 - www.aarst.org
- Conference of Radiation Control Program Directors – Public Sector/State Programs
 - www.crcpd.org
- National Radon Proficiency Program – nrpp.info
- National Radon Safety Board – nrsb.org

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National Radon Certification

- EPA Privatized Radon Certification in 1998 (EPA-RPP)
 - National Radon Proficiency Program (NRPP)
 - Formerly NEHA-NRPP now the AARST-NRPP
 - National Radon Safety Board (NRSB)
- The EPA's Radiation & Indoor Environments National Lab
 - NIST reference for RN-222
- Radon Measurement devices must be approved for use by NRPP or NRSB
- Radon licensure and certification requires entry level exams and renewal requires Continuing Education, Device Calibration and Performance Testing.

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U.S. Standards and Technology

- Single Family Testing and Mitigation Standards
 - ASTM Standards
 - AARST Consortium on National Radon Standards
 - ADS-RMS Mitigation; Homes Measurement, RRNC 2.0
 - EPA Protocols for Radon Measurement (1992 & 1993)
- Radon Resistant New Constructions Standard
 - ASTM 1465 Standard
 - AARST RRNC 2.0 – Code-ready Language
- AARST & ASTM are both ANSI-Accredited

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U.S. Radon Standards & Multifamily Housing

- ASTM E-2121 – a general single family mitigation standard – applicable to some multifamily structures
- ASTM E-1465 – new construction standard for low-rise residential buildings
- ANSI-AARST Protocols for Multifamily Testing
- ANSI-AARST Provisional Radon Mitigation Standard for Multi-family Buildings

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Testing: 25 % versus 100%

- Standard calls for Testing 100% of ground floor units + 10% on each upper floor
- HUD Policy requires a minimum of 25% ground floor units tested in time sensitive applications
- **Caution:** To model radon with a 95% + degree of accuracy, 80 percent of ground floor units would have to be tested.

Single Family Versus Multifamily Mitigation Standard

- ASTM's E-2121 Mitigation Standard – Mitigator's Boeing 737
 - 2121 is a workhouse Radon Mitigation Standard for up to 4 units – traditional house design.
 - Starting basis for traditional housing designs that may include many multifamily buildings
 - Considered a Minimum Standard – the starting place for M/F Mitigation Criteria
 - May Not Be appropriate for More Complex M/F Buildings

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Complex Multifamily Building Designs

- AARST RMS-MF (PS) 2013
- A Provisional ANSI AARST Multifamily Mitigation Standard in final phases of ANSI promulgation
 - To Properly Mitigate Complex Multifamily Buildings, this Provisional ANSI Standard may be recommended by certified and licensed professionals in order to properly mitigate complex building designs
 - This is an enhancement that exceeds the basic ASTM (ASD) Mitigation approach

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Radon Infrastructure – State Programs

- State Radon Programs
 - 35 Voluntary States (Some Territories also have programs.)
 - Generally Rely on Private Certification Agencies (NRPP and NRSB)
 - Do not have Regulatory or rule making authority
 - 15 Regulated States
 - Licensed or licensed through Certification
 - Have regulations and rule making authority
 - Rely on either rules or standards by reference

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Regulated State Environments

Fully Regulated States With Rules and Licensing

- Florida
- Kansas
- Kentucky
- Illinois
- Indiana
- Iowa
- Maine
- Nebraska
- New Jersey
- Ohio
- Pennsylvania
- Rhode Island
- West Virginia

Licensing/Certification or Other Requirements

- Connecticut – Contractors License
- California
- Virginia

Non-Regulated, Non-Licensing States

- Marketplace Relies on Private Certification
 - NRPP and NRSB as private certification agencies meet the minimums established by the original EPA Radon Proficiency Program
- Uncertified Vendors May Legally Operate – therefore:
 - Emphasize legitimate credentials
 - Seek Experienced/Insured/Bonded Vendors
 - Conform to Recognized Standards

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Current Vendor Qualifications

- Nationally Certified and State Licensed
- Special State approvals might be necessary
 - Illinois, Ohio, etc.
- Cert/Licensed - Experiential Level – Recommend 5 years
 - Design and Build Experience
 - School, DOD housing, or other large building experience
 - Properly Insured
 - Knowledge of radon standards

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NRPP Plans Add-On Certificate by October 2013

- NRPP Multifamily Certifications may Require
 - Experience requirements
 - Successful Multifamily Standards Course and Exam
 - Design Capability
 - Advanced Diagnostics (For Mitigators)
 - Separate and Defined Listing

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Multifamily Radon Case Studies

Kyle Hoylman

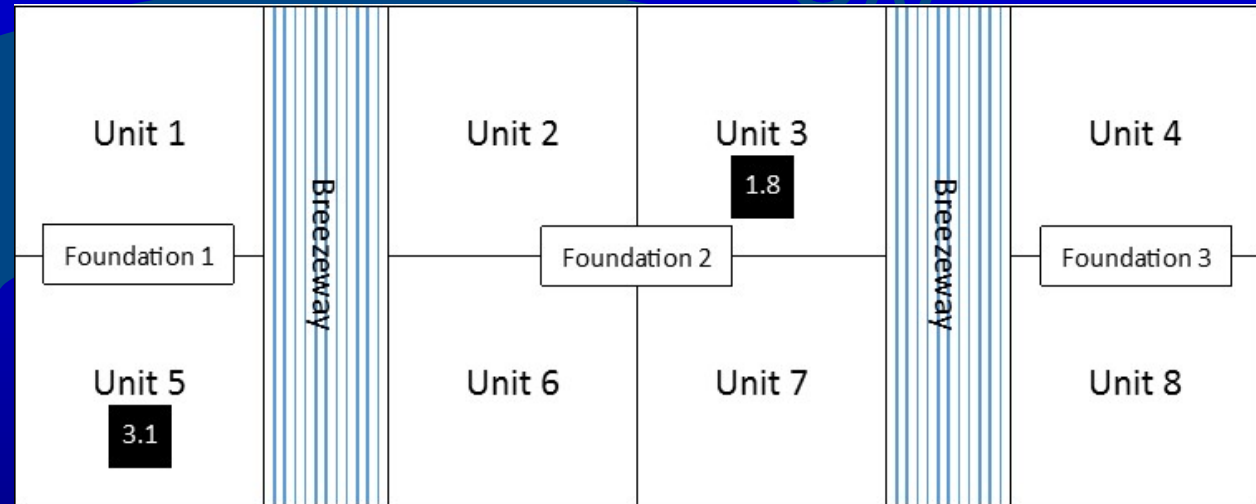
Protect Environmental

AARST Board Member

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Policy: M/F Case Study Scenarios

- 8 ground floor units
- 3 foundation areas
- 1 building
- 25% of units tested
- 0 units ≥ 4.0 pCi/L



Does a radon problem exist in the building?

Because multiple foundation areas exist, not enough units were tested to know if a problem exists. When multiple foundations exist, a minimum of 25% of the units located on each foundation must be tested. Best practice is to require 100% of all ground floor units in your testing plan.

Policy: M/F Case Study Scenarios

- 12 ground floor units
- 1 foundation area
- 1 building

- 100% of units tested
- 3 units ≥ 4.0 pCi/L

Unit 1 3.1	Unit 2 3.3	Unit 3 2.9	Unit 4 5.4	Unit 5 6.1	Unit 6 2.8
Foundation 1					
Unit 7 1.3	Unit 8 1.9	Unit 9 2.8	Unit 10 3.8	Unit 11 6.8	Unit 12 1.8

Which units require mitigation?

When a problem is identified, all units located within the building are required to be mitigated. Failure to mitigate all units within the building may create radon problems within those units not mitigated.

Policy: M/F Case Study Scenarios

- 12 buildings successfully mitigated
- Final clearance documentation issued to client

What ongoing operation and maintenance items are required?

A written Long-Term Risk Management Plan is required for each project. At minimum, the plan must include: (1) an ongoing inspection and maintenance schedule; (2) a requirement to test the mitigated buildings a minimum of 1 time every 2 years. Section 12 of the AARST/ANSI RMS-MF contains minimum requirements for Long-Term Risk Management Plans and other documentation.

Policy: M/F Case Study Scenarios

Other policy considerations:

- Alternative mitigation techniques may be required (contained within AARST/ANSI RMS-MF)
- HVAC influence must be taken into consideration
- Radon emanation from building materials (i.e. concrete) is an issue in some areas of the country
- Radon in water is an issue in some areas of the country
- Non-interference agreements should be a requirement for all testing projects

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Radon Resources

<http://www.epa.gov/radon/>

www.aarst.org

www.crcpd.org

www.nrpp.info

www.nrsb.org

Question and Answers

- Q&A will be via the Question function of the webinar conferencing system.
- Unanswered questions (due to time limits) will be responded to via the AARST website.

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